

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property Organization  
International Bureau



(43) International Publication Date  
23 May 2002 (23.05.2002)

PCT

(10) International Publication Number  
**WO 02/41163 A1**

(51) International Patent Classification: **G06F 17/00**

(21) International Application Number: PCT/KR01/01965

(22) International Filing Date:  
16 November 2001 (16.11.2001)

(25) Filing Language: Korean

(26) Publication Language: English

(30) Priority Data:  
2000/68448 17 November 2000 (17.11.2000) KR

(71) Applicant and

(72) Inventor: **KIM, Taesun** [KR/KR]; 103-204 Daewoo APT,  
546, Eunhaing-dong, Siheung-si, Gyeonggi-do 429-727  
(KR).

(74) Agents: **JUNG, Sesung** et al.; 6F, Yosam Bldg., 648-23  
Yoksam-dong, Gangnam-gu, Seoul 135-748 (KR).

(81) Designated States (*national*): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PH, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW.

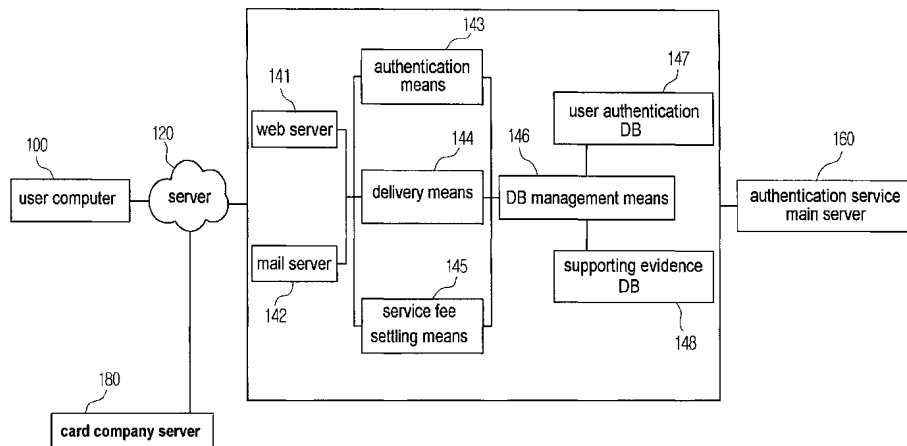
(84) Designated States (*regional*): ARIPO patent (GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

**Published:**

— with international search report

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(54) Title: AUTHENTICATION SERVICE METHOD AND SYSTEM BY PRESERVATION OF SUPPORTING EVIDENCE



(57) **Abstract:** This invention relates to an authentication service, and more particularly to an authentication service method and system which digitalizes a document, a motion picture, a voice, and so on to be stored in a database of an authentication service server in order to use them as supporting evidences when a conflict occurs. The authentication service method and system can register, confirm, and deliver supporting evidence conveniently and safely regardless of time and place. The authentication service method comprises registering a supporting evidence transmitted from a user computer via an internet in an authentication service server; transmitting a user authentication information and a data number to the corresponding user computer; confirming the supporting evidence registered in the authentication service server by the user computer using the transmitted user authentication information and the transmitted data number; and delivering the corresponding supporting evidence according to a deliver information of the registered supporting evidence.



WO 02/41163 A1

## **AUTHENTICATION SERVICE METHOD AND SYSTEM BY PRESERVATION OF SUPPORTING EVIDENCE**

### Technical Field

5           This invention relates to an authentication service, and more particularly to an authentication service method and system which digitalizes a document, a motion picture, a voice, and so on to be stored in a database of an authentication service server in order to use them as supporting evidences when a conflict occurs.

### Background Art

10           In general, supporting evidences such as a contract, a warranty, a written agreement, and a memorandum are notarized by a law firm to prevent a future conflict. However, a person who wants a notarization or his/her agent should visit the law firm with the supporting evidences, and the law firm could not have notarized all materials (e.g.,  
15   document file or a consulting act) due to various legal and technical limitations. When the person lost the notarization document, there are many difficulties in proving them. In addition, since supporting evidence can be accepted and checked during only business hours, there are limitations to time and space. Moreover, there still exists a risk that the supporting evidence kept in the law firm may be damaged or lost.

20           Unlike the above-described method, another conventional art prevents a conflict such that an electronic commercial contract or an e-mail is authenticated through a third party computer system when it is received or sent. The conventional art can be applied to only a contract or a message using a computer. Thus, it is impossible to authenticate off-line transactions.

25

### Disclosure of Invention

          To overcome the problems described above, it is an object of the present invention an authentication service method and system which can register, confirm, and deliver supporting evidence conveniently and safely regardless of time and place.

30           In order to achieve the above object, the preferred embodiments of the present

invention provide an authentication service method using at least one first authentication service server contacting a user computer via an internet, the method comprising: a) transmitting a user authentication information, a user option including a delivery information and a supporting evidence data to be registered from the user computer  
5 selecting a supporting evidence registration to the authentication service server; b) producing a registration number and a first approval number and storing the registration number and the first approval number together with the transmitted data in a database when the data transmitted from the user computer satisfies a predetermined requirement; c) transmitting the corresponding data to a second authentication service server, receiving a  
10 second approval number from the second authentication service server and storing the second approval number in a corresponding region of the database to thereby complete a registration; d) transmitting a data number including the registration number and the first and second approval numbers, and the user authentication number together a registration finish message to the user computer; e) transmitting a user authentication information and  
15 a data number input newly by the user computer selecting a supporting evidence confirmation to the user authentication service server; f) determining whether the input user authentication and the input data number are identical to those stored in the database or not; and g) outputting the corresponding data stored in the database to the corresponding user computer and issuing a certificate of confirmation.

20 The present invention further provides an authentication service system using an internet, comprising: a user computer contacting the internet, communicating with a web server of an authentication service server through a web browser thereof, and storing a digitalized supporting evidence data to be registered in the authentication service server; and at least one authentication service server registering, confirming and delivering the  
25 supporting evidence data transmitted from the user computer.

#### Brief Description of Drawings

FIG. 1 is a block diagram of an authentication service system according to the present invention;

30 FIG 2. is a flow chart illustrating a procedure of registering and confirming

supporting evidence according to the present invention;

FIG. 3 shows an example of a supporting evidence registration form according to the present invention;

FIG. 4 shows an example of a supporting evidence confirmation form according to  
5 the present invention; and

FIG. 5 shows an example of a certificate of registration and a certificate of confirmation according to the present invention.

#### Best Mode for Carrying Out the Invention

10 The present invention will be described in detail using the accompanying drawings.

FIG. 1 is a block diagram of an authentication service system according to the present invention. The authentication service system includes a user computer, an authentication service server, and a card company server.

The user computer 100 can access an internet 120 and communicate with a web-  
15 server 141 of the authentication service servers 140 and 160 using a web-browser. The user computer 100 is storing a digitized supporting evidence which will be registered in the authentication service server.

The digitized supporting evidence includes a data to be digitalized such as a company consulting document, a major counseling document, a will document, and a data  
20 (motion picture, audio, document, etc.) requiring a record or an authentication, and digitized data such as a document file, a still picture file, an audio file, a motion picture file, etc.

The authentication service servers 140 and 160 serves to register and store the supporting evidence transmitted from the user computer 100. The authentication service  
25 servers 140 and 160. The authentication service server 150 includes a web-server 141 for communicating with a web-browser of the user computer; a mail server 142 for sending an e-mail to the user computer(100); an authentication means 143 for conferring an registration number, a first approval number, and a second approval number to the supporting evidence to be registered, and determines whether a user has a right to read the  
30 registered supporting evidence or not; a delivery means 144 for automatically delivering

the registered supporting evidence by using a delivery information; a service fee settling means 145 for calculating a service fee according to a capacity and a preservation period of the registered supporting evidence and settling the service fee; a user authentication database 147 for storing a user authentication information, a user option (a supporting  
5 preservation period, a delivery information, and an information as to whether to disclose), the registration number, a first approval number, the second approval number, and so on; a supporting evidence database 148 for storing the supporting evidence transmitted from the user computer 100; and a database management means 146 for managing the databases 147 and 148 and allowing a user authentication by the authentication means 13 to access to  
10 the databases 147 and 148.

The authentication service server, as shown in the drawing, includes the local server 140 and the main server 160 which store the same data in order to prevent the data from being changed.

The data can be stored separately in an external recording medium such as a CD, a  
15 DVD, a HDD, and a magnetic tape in order to secure a data security and to prevent the data from being changed.

The registration number includes a registration data and time, a registration order, a data type, a corresponding branch code, a country code, and an authentication service server serial number. The registration number is generated in the initial stage of data  
20 registration.

The first and second approval numbers are generated in each of the authentication service servers, and includes a registration data and time, a registration order, a data type, a corresponding branch code, a country code, and an authentication service server serial number. The authentication numbers are used to manage the data.

The data type is a character to classify a document, a picture, a voice, a motion picture, etc. For example, Pa, Ph, So, Vs, and the like are used as the data type.

The card company server 180 is used to settle a service fee of the user authentication service server 140.

FIG 2. is a flow chart illustrating a procedure of registering and confirming  
30 supporting evidence according to the present invention. FIG. 3 shows an example of a

supporting evidence registration form according to the present invention. FIG. 4 shows an example of a supporting evidence confirming form according to the present invention. FIG. 5 shows an example of a certificate of registration and a certificate of confirmation according to the present invention.

5           A user who wants to register the supporting evidence accesses the authentication service local server 140 using the web browser of the user computer 100 with web-browser (step S200).

          When a data registration menu is selected in an output initial screen (step S201), the data input form is output as shown in FIG. 3 (step S202).

10           The user inputs a user authentication information such as an applicant name, a social security number (user ID code), a password etc., and selects the supporting evidence to be uploaded to the authentication service server (step S203).

          Here, the user inputs a payment information and a user option such as an information as to whether to disclose, and a preservation period, and inputs a delivery  
15   address (e-mail address or a regular mail address) and a delivery date when he/her wants to receive the supporting evidence.

          When the information input is complete, the input data are output to be confirmed by the user. If the input data have no errors, the selected supporting evidences are transmitted to the authentication service local server 140 (step S204).

20           Thereafter, the authentication service local server 140 determines whether the user authentication information satisfies requirements or not and whether the received supporting evidence can be recognized or not (step S205).

          If the authentication information and the supporting evidence data do not satisfy the requirements in the step S205, a re-input is requested. If the authentication information  
25   and the supporting evidence data satisfy the requirements, the registration number and the first approval number are generated, the user authentication information and the user option are stored in the user authentication database 147, and the supporting evidence data are stored in the supporting evidence database 148.

          Thereafter, the authentication service local server 140 communicates with the  
30   authentication service main server 160 to transmit the corresponding data (user

authentication information, user option, registration number, first approval number, supporting evidence data) (step S207).

Then, the second approval number of the data is generated in the authentication service main server 160, and the transmitted data are stored in a database of the authentication main server 160 (step S208).

Next, the second approval number is transmitted to the local server 140 in which the first registration was produced (step S209), and the authentication service local server 140 receives the second approval number to store it in the existing data stored in the original database 147 (step S210).

After the above-described steps are completed, a certificate of registration shown in FIG. 5, in which user authentication information, data number (registration number, first approval number, second approval number) and the registered supporting evidence are stated, are issued to the user computer together with a registration finish message through a web-document or an e-mail. If necessary, a certificate of confirmation showing that the supporting evidence is normally registered is also issued (step S211). The certificate of registration and the certificate of confirmation can be delivered to the user through a regular mail service.

When the delivery information (delivery address and delivery date) is input at the time when the supporting evidence is registered, the registered supporting evidence is transmitted to the delivery address on the deliver date automatically by the delivery means 144 of the authentication service local server 140 or delivered to the user by a regular mail service.

Meanwhile, the following process can be available. When a data is transmitted completely from the user computer 100 to the authentication service local server 140 at the time when the support evidence is registered, the registration number is generated, and thereafter a service fee is calculated by the service fee settling means 145. After the service fee is settled, the first approval number is generated and stored in the database, and the subsequent steps S207 to S211 are performed.

Further, the initial registration of the supporting evidence and the delivery of the registered supporting evidence can be performed in the authentication service main server

160. In this case, a role of the authentication service local server 140 and a role of the authentication service main server 160 are switched. That is, both the authentication service main server 160 and the authentication service local server 140 serve as a registration server which performs registration for the supporting evidence.

5           In order to confirm the registered supporting evidence, like the registration process, the user accesses the authentication service servers 140 and 160 to select a data confirmation menu (step S212), so that a supporting evidence confirming form is output as shown in FIG. 4. The user inputs the user authentication information and a data number using the supporting evidence confirming form (step S213). Here, at least one of the  
10 registration number, the first approval numbers, and the second approval number is input as the data number.

          The authentication means 143 of the authentication service servers 140 and 160 checks whether the input data number exists in the user authentication database 147 or not. If it exists, it is determined whether the input user authentication information is identical to  
15 the user authentication information stored in the user authentication database 147 or not (step S214).

          When the data number does not exist or the user authentication information is not identical to that stored in the authentication database 147, the data number and the user authentication information are requested to be input again. When the input user  
20 authentication information is identical to the user authentication information stored in the user authentication database 147, the supporting evidence stored in the supporting evidence database 148 is printed by the user computer (step S215).

          After the supporting evidence is printed, the certificate of confirmation of FIG. 5 showing that the corresponding supporting evidence is registered in the authentication  
25 service server is issued in the form of a web-document or an e-mail (step S216).

          In addition, a function can be added that compares the original data with the data stored in the authentication service servers 140 and 160 to confirm whether the original data is changed or not.

          Due to this function, it is confirmed whether the data is damaged by network  
30 errors occurred at the time when the data is registered, and also it is confirmed whether the



other users change the original data after the data is registered or not.

If the user cannot input the correct password or the correct data number due to a loss of the certificate of registration in the step S213, the user can visit the authentication service servers 140 and 160 to be informed of the correct password or the correct data number after undergoing the authentication process. Further, as another on-line method to confirm the user, a motion picture of the user can be stored in the authentication service servers 140 and 160 using a web-camera, and the user authentication information and the data number (registration number, and first and second approval number) are given to the user after confirming the user using the web-camera. As a result, a misuse of the supporting evidence can be prevented.

The present invention is described focusing on the registration process of the supporting evidence which is performed on the web. However, the present invention can be applied to a method that the user transmits the supporting evidence to the authentication service servers 140 and 160 through an e-mail, and the manager of the authentication service servers 140 and 160 confirms the transmitted data to confer the registration number and to store it in the database of the authentication service server.

In addition, an off-line method can also be used that the user or his/her agent directly visits the law firm, and shows the supporting evidence to register or confirm the supporting evidence. In this case, the non-digitalized materials can be used as the supporting evidence. The non-digitalized materials are digitalized for the registration using a scanning, a photographing, or an editing. Furthermore, the supporting evidence can be accepted for the registration by a regular mail service or the third party through a data digitalization process when the party permits.

#### Industrial Applicability

As described above, according to the present invention, the supporting evidence which is stored in the authentication service server together with time information can be a powerful evidence when a conflict occurs.

In addition, the present invention has advantages in that the supporting evidence can be registered, confirmed and delivered wherever the internet is accessible, and a

damage of the original data can be prevented because the original data is digitalized and then stored. Moreover, the delivery information can be input, so that the user can receive the data on the desired date at the desired place, leading to a very convenience.

What is claimed is:

1. An authentication service method using at least one first authentication service server contacting a user computer via an internet, the method comprising:

5 a) transmitting a user authentication information, a user option including a delivery information and a supporting evidence data to be registered from the user computer selecting a supporting evidence registration to the authentication service server;

b) producing a registration number and a first approval number and storing the registration number and the first approval number together with the transmitted data in a  
10 database when the data transmitted from the user computer satisfies a predetermined requirement;

c) transmitting the corresponding data to a second authentication service server, receiving a second approval number from the second authentication service server and storing the second approval number in a corresponding region of the database to thereby  
15 complete a registration;

d) transmitting a data number including the registration number and the first and second approval numbers, and the user authentication number together a registration finish message to the user computer;

e) transmitting a user authentication information and a data number input newly by  
20 the user computer selecting a supporting evidence confirmation to the user authentication service server;

f) determining whether the input user authentication and the input data number are identical to those stored in the database or not; and

g) outputting the corresponding data stored in the database to the corresponding  
25 user computer and issuing a certificate of confirmation.

2. The method of claim 1, wherein the step (b) further includes calculating a service fee according to a capacity and a preservation period of the supporting evidence data and settling the service fee.

3. The method of claim 1, wherein the second authentication service server of the step (c) is storing the same data as the first authentication service server in a database thereof.

5           4. The method of claim 1, further comprising, in addition to the step (d), delivering the corresponding supporting evidence data to the user computer on a day determined by a delivery information of the registered supporting evidence data.

10           5. The method of claim 4, wherein the supporting evidence is delivered by one of a regular mail service or an e-mail.

15           6. The method of claim 1, wherein the data number received from the user computer includes at least one of the registration number and the first and second approval numbers.

          7. The method of claim 1, further comprising, in addition to the step (f), comparing and confirming the supporting evidence data stored in the user computer with the supporting evidence data stored in the database of the authentication service server.

20           8. An authentication service system using an internet, comprising:  
          a user computer contacting the internet, communicating with a web server of an authentication service server through a web browser thereof, and storing a digitalized supporting evidence data to be registered in the authentication service server; and  
          at least one authentication service server registering, confirming and delivering the  
25           supporting evidence data transmitted from the user computer.

          9. The system of claim 8, wherein the authentication service server includes  
          a web server communicating with the web browser of the user computer;  
          a mail server sending an e-mail to the user computer;  
30           an authentication means conferring a data number to the registered supporting

evidence data and determining whether the user has an authority to read the registered supporting evidence data;

a delivery means delivering the registered supporting evidence data using a delivery information automatically;

5 a service fee settling means calculating a service fee according to a capacity and a preservation period of the registered supporting evidence data and settling the service fee;

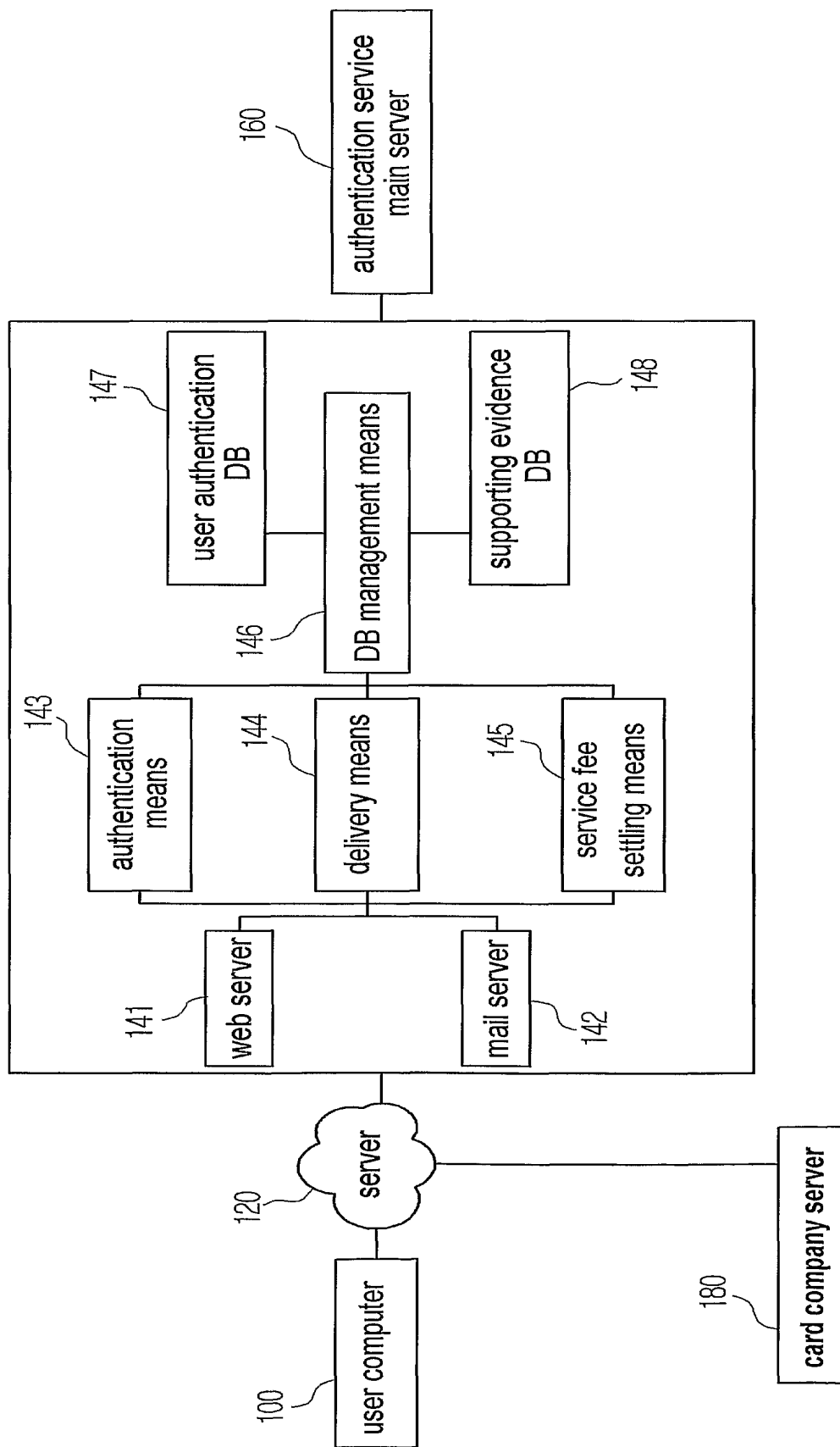
a user authentication database storing a user authentication information, a user option, and a data number;

a supporting evidence database storing the supporting evidence data transmitted  
10 from the user computer; and

a database management means managing the databases and allowing an access for the databases to the user authenticated by the authentication means.

1/5

FIG. 1



2/5

FIG. 2

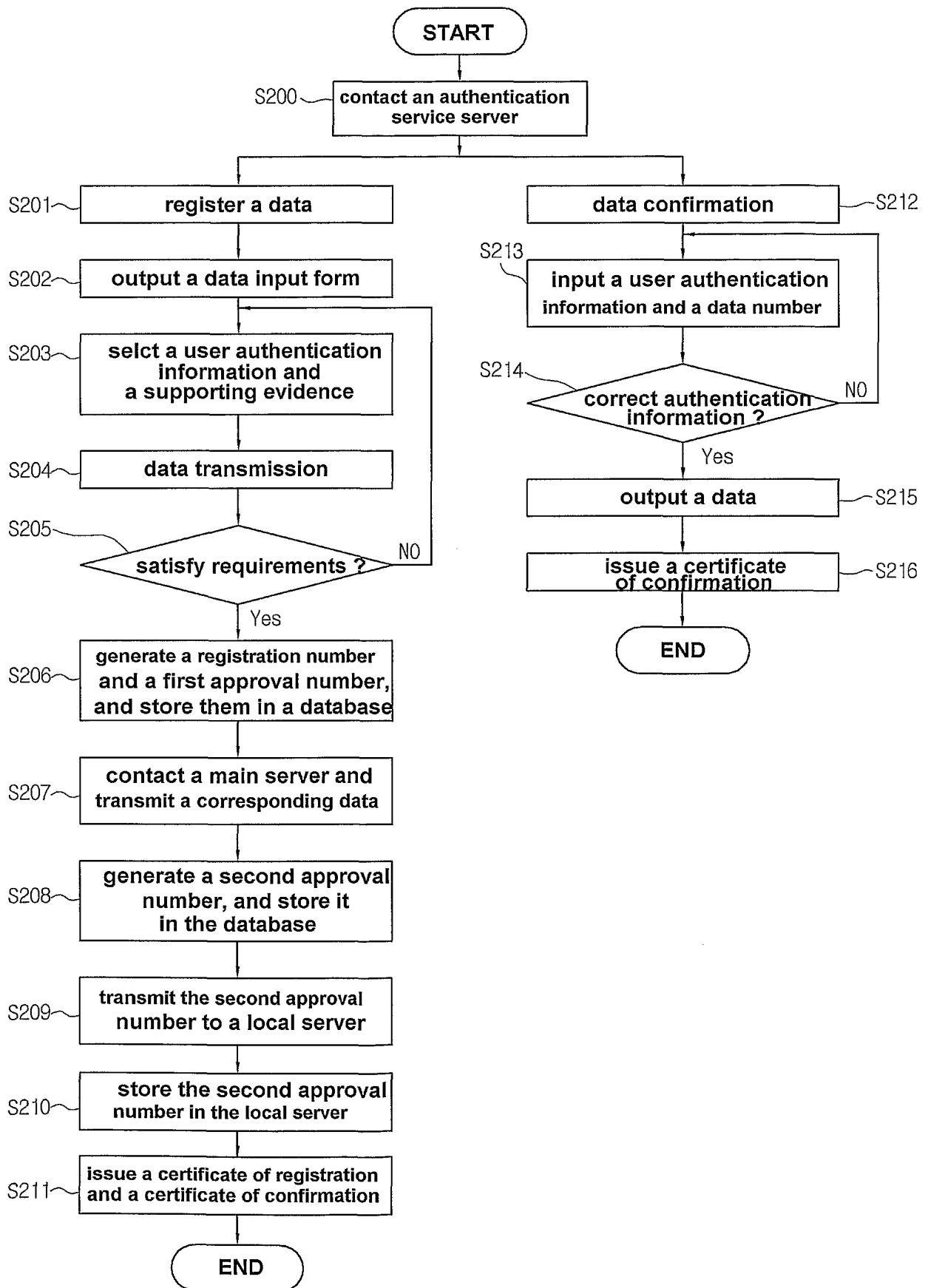


FIG. 3

data registration	
applicant/ registrator	<input type="text" value="Gildong HONG"/> social security number <input type="text" value="XXXXXX-XXXXXX"/>
password	<input type="text" value="*****"/> password confirmation <input type="text" value="*****"/>
registration content	<input type="text" value="C:\My Document\movie1230.mpg"/> <input type="button" value="find file"/>
payment information	<input type="text" value="credit card"/> <input type="button" value="v"/> account/card number <input type="text" value="XXXXX-XXXXXXXX"/>
description	
<input type="text" value="consulting content with a company XX"/>	
data preservation period	<input type="text" value="2002.01.01"/> ~ <input type="text" value="2003.01.01"/>
data delivery	<input type="text" value="tester@tester.co.kr"/> delivery date <input type="text" value="2002.06.15"/>
disclosure	<input type="radio"/> closed <input checked="" type="radio"/>
<input type="button" value="cancel"/> <input type="button" value="transmission"/>	



FIG. 4

data coonfirmation	
name	Gildong HONG
social security number	XXXXXX-XXXXXX
password	*****
registration number	
first approval number	2002010122301001VS1234567KRC
second approval number	
<div>password confirmation</div> <div>confirmation</div>	

FIG. 5

certificate of registration	
◆ registration date:	2002. 01. 01 23:00
◆ registrator:	Gildong HONG
◆ password:	TX348SK
◆ registration number:	200201012300001VS12345KRC
◆ first approval number:	200201012301001VS1234567KRC
◆ second approval number:	200201012301001VS1234567KRA
◆ registered content:	motion picture, 8 minutes record confirmation
◆ the others:	

certificate of confirmation	
◆ confirmation date:	2002. 02. 03
◆ registrator:	Gildong HONG (XXXXXX-XXXXXX)
◆ registration number:	200201012300001VS12345KRC
◆ first approval number:	200201012301001VS1234567KRC
◆ second approval number:	200201012301001VS1234567KRA
◆ confirmor:	Cheolsu KIM (XXXX-XXXX)
◆ confirmation content:	motion picture, 8 minutes (20MB) identical to a registered data

## INTERNATIONAL SEARCH REPORT

International application No.

PCT/KR01/01965

**A. CLASSIFICATION OF SUBJECT MATTER****IPC7 G06F 17/60**

According to International Patent Classification (IPC) or to both national classification and IPC

**B. FIELDS SEARCHED**

Minimum documentation searched (classification system followed by classification symbols)

IPC7 G06F

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

KR, JP

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

WPI, PAJ

**C. DOCUMENTS CONSIDERED TO BE RELEVANT**

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	US 5659165A (Citibank, N.A.) 19. August. 1997 See the whole document	1-9
A	WO 97-12460 (SAVAGE, Michael, G. et al) 3. April. 1997 See the whole document	1-9
A	US 5231668A (KRAVITZ) 27. July 1993 See the whole document	1-9
A	US 5524073A (STAMBLER) 4. June 1996 See the whole document	1-9
A	US 5455407A (ROSEN) 3. October 1995 See the whole document	1-9
A	KR 2000-54655 (Shin, Hyun Kun) 5. September. 2000 See the whole document	1-9

☐ Further documents are listed in the continuation of Box C.☐ See patent family annex.

\* Special categories of cited documents:

"A" document defining the general state of the art which is not considered to be of particular relevance

"E" earlier application or patent but published on or after the international filing date

"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of citation or other special reason (as specified)

"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art

"&" document member of the same patent family

Date of the actual completion of the international search

31 DECEMBER 2001 (31.12.2001)

Date of mailing of the international search report

31 DECEMBER 2001 (31.12.2001)

Name and mailing address of the ISA/KR

Korean Intellectual Property Office  
Government Complex-Daejeon, Dunsan-dong, Seo-gu, Daejeon  
Metropolitan City 302-701, Republic of Korea

Facsimile No. 82-42-472-7140

Authorized officer

JEON, Hyun Jin

Telephone No. 82-42-481-5788

